Modular compact filter KF

KNOLL
.It works

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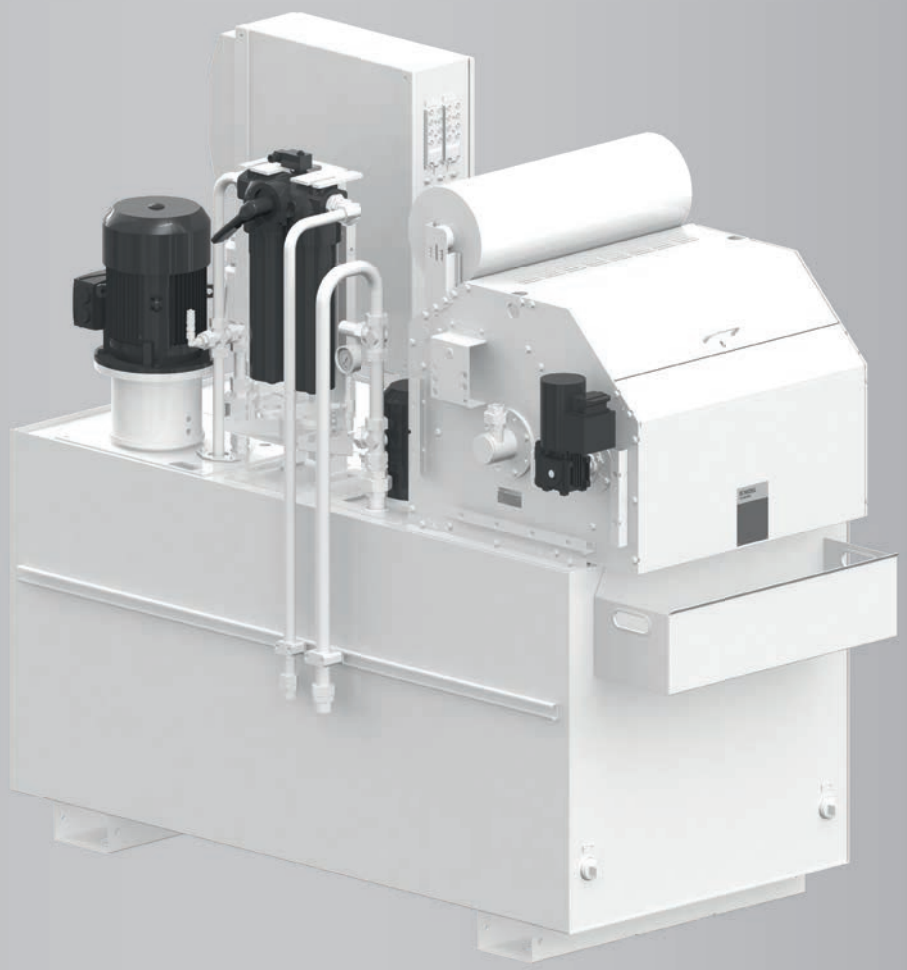


Properties	Benefits
Compact design	Space-saving installation
Good value for the money	Short amortization period
Higher hydrostatic pressure compared to flat bed filters	Higher flow volume, lower fleece consumption and better level of purity
Sweeper blades and scrapers	Trouble-free removal of chips, including light metal
Universally applicable for different machining processes, materials, cooling lubricants, volume flows and levels of purity	Simple design and planning
Modular construction kit	• Specific system according to customer requirements • Short delivery time • Good replacement part availability
Plug-and-Play through universal, digital interfaces	Quick installation and start-up

Areas of application

KNOLL Compact Filters KF are belt filters for cleaning cooling lubricants (KSS) from machining processes
- Used as a stand-alone cleaning unit or in combination with chip conveyors (e.g, at machining centers)
- Local (for one machine tool) or central use (for several machine tools) possible

Description

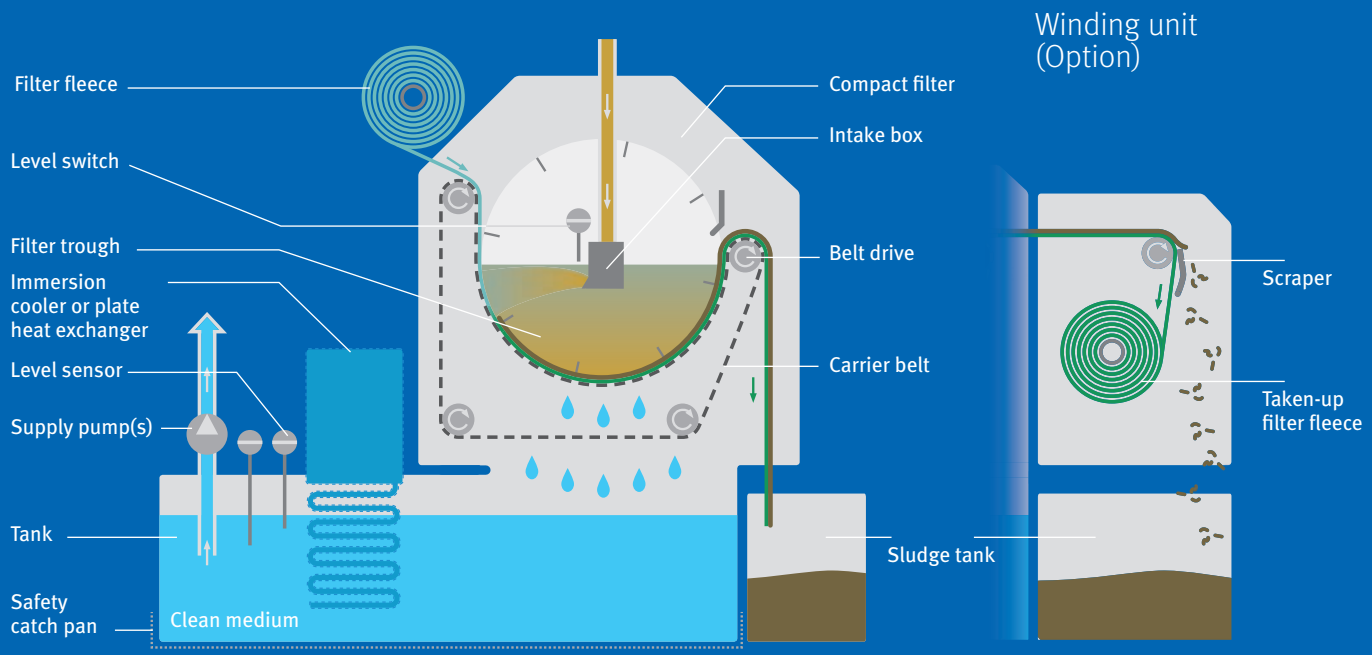
Filtering process

1. Dirty liquid flows laterally through the intake box into the filter trough
2. The filter fleece retains the dirt particles as they flow through it
3. The dirt particles form a filter cake that separates even the smallest dirt particles
4. The clean liquid collects in the clean tank
5.Low and high pressure pumps supply the machine tool with cleaned KSS as required

Regenerations process

1. The growing filter cake increases the flow resistance
2. The liquid level in the filter trough increases
3. The belt drive switches on at a defined level (alternatively: time-controlled)
4. The carrier belt transports a piece of clean filter fleece onto the filter surface
5. The level of the liquid decreases again
6. A sludge container or a take-up unit takes up the dirty filter fleece

Diagram



Basic equipment

- Compact filter
- Filter fleece (initial equipment)
- Supply pump(s)
- Low fleece switch
- Level measurement technology
- Control unit
- Tank

Powerful electrical engineering

Customized electrical engineering with modular design - optimally prepared for your application

Modular construction kit

Compact filter

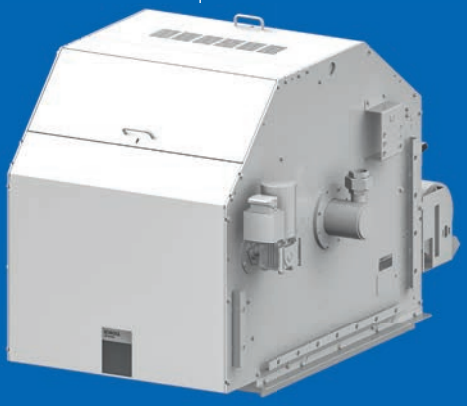
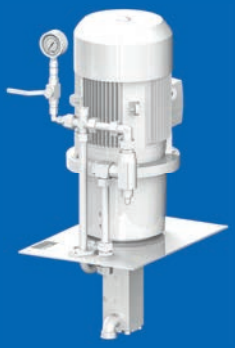


Plate heat exchanger

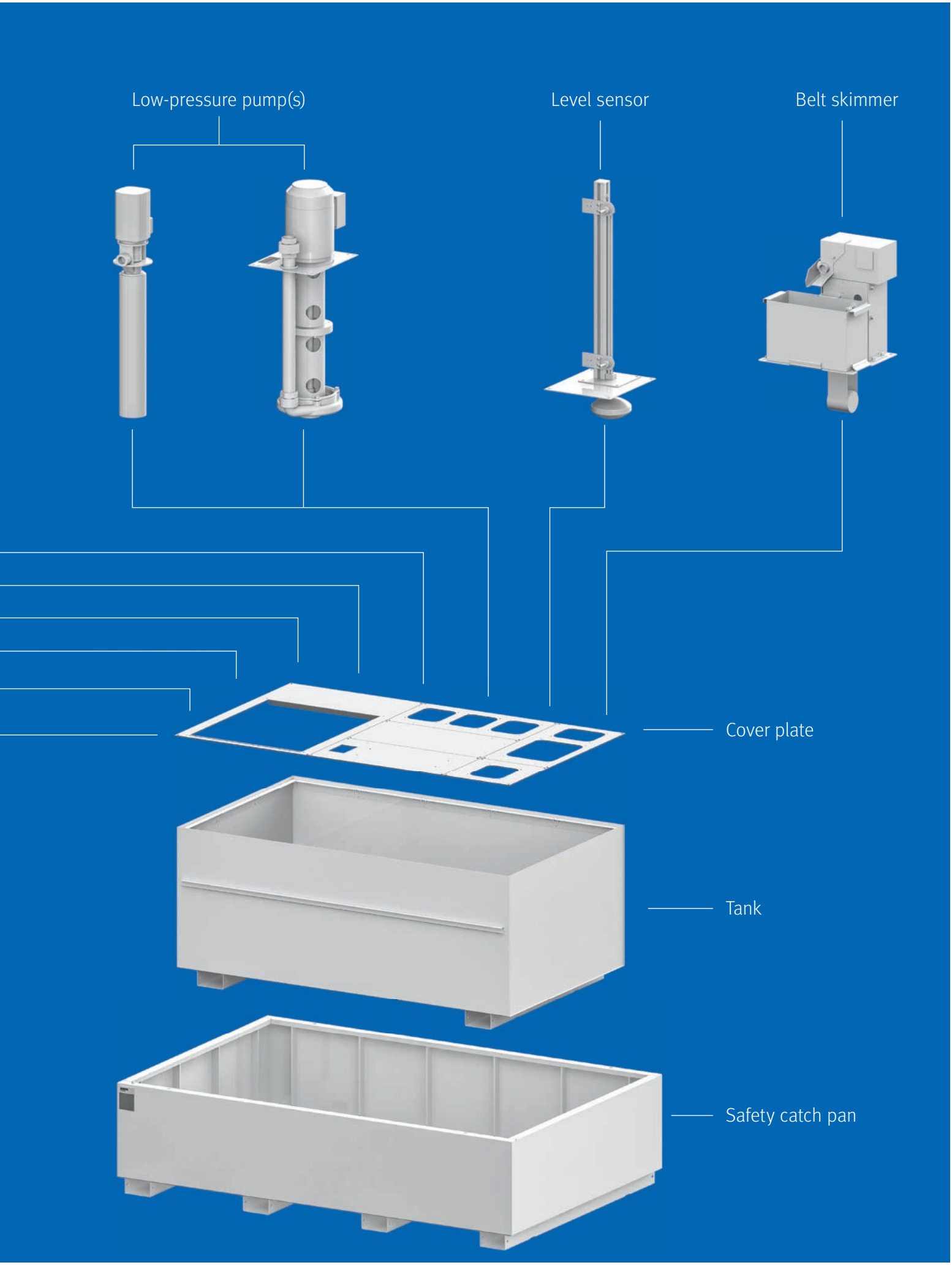
Duplex switch filter

High-pressure pump(s)

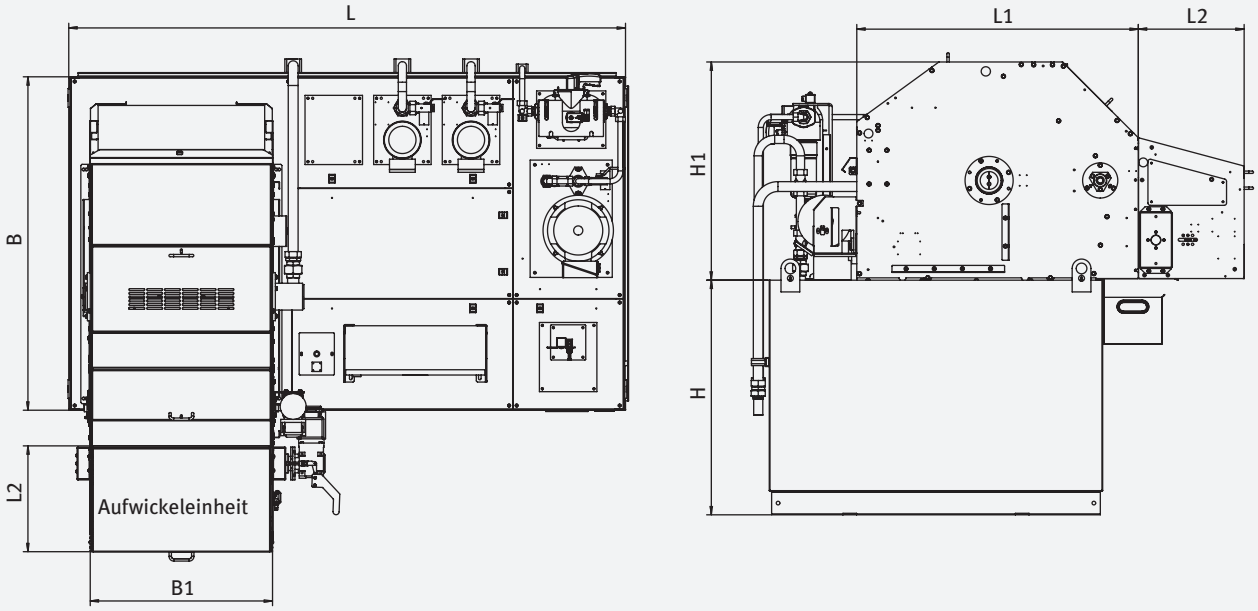


Control cabinet

Immersion cooler


Low-pressure pump(s)
Level sensor
Belt skimmer
Cover plate
Tank
Safety catch pan

Dimensions



Configuring an individual filter system

1. Select the compact filter

Type*	Filter capacity (l/min)		Intake	Fleece width	H1	B1	L1	L2
	Emulsion**	Oil	DN					(optional)
KF 110	110	40	25	390	740	455	780	415
KF 150	150	60	25	540	740	600	780	415
KF 200	200	90	25	710	740	780	780	415
KF 300	300	130	40	540	1050	600	1200	450
KF 400	400	175	40	710	1050	780	1200	450
KF 600	600	250	40	1020	1240	1100	1495	450

Dimensions without specification of units in mm

* KF 110 – KF 200 Fleece roll at the top, KF 300 – KF 600 fleece roll at the rear (standard)

** Machining with standard fleece

2. Select pump assembly and design

Maximum number of high-pressure pumps	Maximum number of low-pressure pumps
2	3
1	4
0	5

Pump 1-5	High-pressure	Low-pressure	
Motor circuit	direct	plug connection	Inverter
Valve	Vario	Standard	
Pressure sensor	○		
Duplex switch filter	○		

3. Select variants

Filter fleece (initial equipment)	**PW 70/70**	PW 100/100	PW 150/150
Fleece roll arrangement	**top**	**rear**	
Level indicator	**optical**	digital	
Level sensor	**digital**	analog	
Cooler	side cooler	immersion cooler	plate heat exchanger
Control	**absolute temperature**	room temperature	
Control panel	**KTP 400**	KTP 700	SmartConnect (starting in 2023)
Interface connection	**mating connector**	open end	custom
BUS interface	none	Profinet	Profibus

Highlighted= recommended standard

4. Select options

Take-up device	○
Belt skimmer	○
Magnetic roller as pre-separator	○
Side panel	○
Fill level measuring technology i.a.w. WRA	○
Safety catch pan i.a.w. WRA	○

5. Select tank

Filters	Tank	Dimensions LxWxH [mm]	Volume [l] approx.
KF 110, KF 150, KF 200 **KF 110, KF 150,** KF 200	R0	1431 x 950 x 800 1431 x 950 x 1000	800 1100
KF 110, KF 150, KF 200 **KF 150, KF 200**	R1	1902 x 950 x 800 1902 x 950 x 1000	1100 1500
KF 150, KF 200 **KF 200,** KF 300	R2	2373 x 950 x 800 2373 x 950 x 1000	1400 1850
KF 150, KF 200, KF 300 **KF 200, KF 300,** KF 400	R3	1902 x 1421 x 800 1902 x 1421 x 1000	1700 2200
KF 200, KF 300, KF 400 **KF 300, KF 400**	R4	2373 x 1421 x 800 2373 x 1421 x 1000	2100 2800
KF 300, KF 400 **KF 300, KF 400,** KF 600	R5	2844 x 1421 x 800 2844 x 1421 x 1000	2500 3300
KF 300, KF 400 **KF 400, KF 600**	R6	2373 x 1892 x 800 2373 x 1892 x 1000	2800 3700
KF 300, **KF 400,** KF 600 **KF 400, KF 600**	R7	2844 x 1892 x 800 2844 x 1892 x 1000	3350 4400
KF 110, **KF 150, KF 200** KF 150, **KF 200, KF 300**	Q1	1431 x 1421 x 800 1431 x 1421 x 1000	1300 1700
KF 200, KF 300, KF 400 **KF 300, KF 400**	Q2	1902 x 1892 x 800 1902 x 1892 x 1000	2200 3000
KF 400, KF 600 **KF 600**	Q3	2373 x 2363 x 800 2373 x 2363 x 1000	3500 4600

Highlighted = standard filter for the tank size

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KF

6. Place components with mounting plates on the tank

Mounting plate

XS = 469 x 469 mm
Components (except for compact filter, control cabinet, immersion cooler, high-pressure pump)

S = 469 x 940 mm
Components (except for compact filter, immersion cooler)

M = 940 x 940 mm
- KF 110, 150, 200
- Components (except for plate heat exchanger)

L = 469 x 1411 mm
Components (except for compact filter, immersion cooler, plate heat exchanger)

XL = 940 x 1411 mm
- KF 300, 400
- Components (except for immersion cooler, high pressure pump, plate heat exchanger)

XXL = 1411 x 1411 mm
- KF 600
- Components (except for immersion cooler, high pressure pump, plate heat exchanger)

Examples